Space Weather Forecast

Issued on Tuesday, 31 October 2023 at 12:47 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

Space Weather Forecast Headline: Fast wind from a coronal hole slowly declining through the period.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has remained Low, with only weak Common-class flares from a large and relatively complex region in the southern hemisphere. This is one of four regions on the visible disc, with two weaker and smaller regions in the northern hemisphere and a newly emerged weak sunspot in the southeast. No Earth-directed CMEs have been observed on available imagery.

Solar Wind / Geomagnetic Activity: Solar wind speeds has begun to steadily weaken, but remain at slightly elevated levels, as the source of a fast solar wind begins to fade. Total magnetic field strength is weak, with the north-south component also varying weakly. Geomagnetic activity has been mostly Quiet to Unsettled.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) remained at background levels with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Low solar activity is expected, with a slight chance of Moderate activity, especially from AR3474.

Solar Wind / Geomagnetic Activity: No Earth directed CMEs are forecast. A current fast solar wind is forecast to steadily wane towards slightly elevated or background levels through the next four days as the source of the faster wind, rotates towards the western limb. No further fast solar winds are expected through the next four days. Geomagnetic activity is likely to be mostly Quiet to Unsettled, with a slight chance of Active interval on 31 Oct. Returning to ambient levels from the 01 Nov.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is forecast to persist at background with no solar radiation storms occurring.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	5	1	1	1
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	20	20	25	30
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	1	1	2	5
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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